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## NOTICE OF ALLOWANCE AND FEE(S) DUE

29989 7590 12/15/2004

HICKMAN PALERMO TRUONG & BECKER, LLP  
1600 WILLOW STREET  
SAN JOSE, CA 95125

EXAMINER

THOMPSON, ANNETTE M

ART UNIT

PAPER NUMBER

2825

DATE MAILED: 12/15/2004

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/421,437	10/19/1999	DAVID C. CHAPMAN	50265-018	4145

TITLE OF INVENTION: APPROACH FOR ROUTING AN INTEGRATED CIRCUIT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$0	\$700	03/15/2005

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

### HOW TO REPLY TO THIS NOTICE:

#### I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
- B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or
- B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail**

**Mail Stop ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
or Fax (703) 746-4000**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

29989 7590 12/15/2004

**HICKMAN PALERMO TRUONG & BECKER, LLP  
1600 WILLOW STREET  
SAN JOSE, CA 95125**

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

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nonprovisional	YES	\$700	\$0	\$700	03/15/2005

EXAMINER	ART UNIT	CLASS-SUBCLASS
THOMPSON, ANNETTE M	2825	716-013000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).  
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,  
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1	_____
2	_____
3	_____

### **3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)**

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

#### **4a. The following fee(s) are enclosed:**

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

#### **4b. Payment of Fee(s):**

- ☐ A check in the amount of the fee(s) is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

#### **5. Change in Entity Status (from status indicated above)**

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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HICKMAN PALERMO TRUONG & BECKER, LLP 1600 WILLOW STREET SAN JOSE, CA 95125				
EXAMINER THOMPSON, ANNETTE M				
ART UNIT		PAPER NUMBER		
2825				
DATE MAILED: 12/15/2004				

## Determination of Patent Term Extension under 35 U.S.C. 154 (b) (application filed after June 7, 1995 but prior to May 29, 2000)

The Patent Term Extension is 650 day(s). Any patent to issue from the above-identified application will include an indication of the 650 day extension on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (703) 305-1383. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

# Notice of Allowability

Application No.

09/421,437

Examiner

A. M. Thompson

Applicant(s)

CHAPMAN, DAVID C.

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to BPAI decision of 29 July 2004.
2. ☒ The allowed claim(s) is/are 16-18, 21, 23, 45, 46, 50, 52 and 63-65, renumbered (37 CFR 1.126).
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☒ to Paper No./Mail Date 5.
    - (b) ☒ including changes required by the attached Examiner's Amendment/Comment or in the Office action of Paper No./Mail Date 9 February 2001, and approved by EXAMINER in Paper No. 12.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

A. M. Thompson  
Primary Examiner  
Technology Center 2800

### DETAILED ACTION

1. The period for seeking court review of the decision by the Board of Patent Appeals and Interferences rendered July 29, 2004 has expired. The proceedings as to the rejected claims are considered terminated (see 37 CFR 1.197(c)).

2. Pursuant to the Board Decision on Appeal, claims 1-15, 19, 20, 22, 24-44, 47-49, 51, 53-62, 66 and 67 are herein cancelled by Examiner's Amendment, infra (MPEP § 1214.06). Claims 21, 23, 50 and 52 stand allowed. Claims 16-18, 45, 46 and 63-65 are incomplete because they depend from claims that have been cancelled via Examiner's Amendment, infra.

3. Therefore, and further in accordance with MPEP § 1214.06, dependent claims 16-18, 45, 46 and 63-65 will be rewritten in independent format via Examiner's amendment, infra., and will stand allowed.

4. Appellant's Amendment after Board Decision filed October 4, 2004, will not be entered because it amends claims that are subject to cancellation based on Board-affirmed claim rejections and fails to rewrite all the dependent claims with Board-reversed claim rejections in independent format.

### EXAMINER'S AMENDMENT

5. An Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

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6. Cancel claims 1-15, 19, 20, 22, 24-44, 47-49, 51, 53-62, 66 and 67.

7. Replace the text of claims 16, 18, 45, 63 and 65 as follows:

**Rewrite Claim 16 as follows:**

A method for automatically routing an integrated circuit, the method comprising the computer-implemented steps of:

receiving integrated circuit layout data that defines a set of two or more integrated circuit devices to be included in the integrated circuit;

receiving integrated circuit connection data that specifies one or more electrical connections to be made between the integrated circuit devices;

determining, based upon the integrated circuit layout data and the integrated circuit connection data, a set of one or more routing indicators that specify a set of one or more preferable intermediate routing locations through which a routing path is to be located to connect first and second integrated circuit devices from the set of two or more integrated circuit devices;

determining, based upon the integrated circuit layout data, the integrated circuit connection data and the set of one or more routing indicators, the routing path between the first and second integrated circuit devices, wherein the routing path satisfies specified design criteria, and wherein determining the routing path between the first and second integrated circuit devices includes performing one or more design rule checks on one or more portions of the routing path as the routing path is being determined; and

updating the integrated circuit layout data to generate updated integrated circuit layout

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data that reflects the routing path between the first and second integrated circuit devices.

**Rewrite claim 18 as follows:**

A method for automatically routing an integrated circuit, the method comprising the computer-implemented steps of:

receiving integrated circuit layout data that defines a set of two or more integrated circuit devices to be included in the integrated circuit;

receiving integrated circuit connection data that specifies one or more electrical connections to be made between the integrated circuit devices;

determining, based upon the integrated circuit layout data and the integrated circuit connection data, a set of one or more routing indicators that specify a set of one or more preferable intermediate routing locations through which a routing path is to be located to connect first and second integrated circuit devices from the set of two or more integrated circuit devices;

determining, based upon the integrated circuit layout data, the integrated circuit connection data and the set of one or more routing indicators, the routing path between the first and second integrated circuit devices, wherein the routing path satisfies specified design criteria, and wherein

determining the routing path between the first and second integrated circuit devices includes

extending the routing path a specified amount to generate an extended portion of the routing path, and

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*F2*  
*could*

selectively performing a design rule check on only the extended portion of the routing path; and

updating the integrated circuit layout data to generate updated integrated circuit layout data that reflects the routing path between the first and second integrated circuit devices.

*10*

**Rewrite claim 45 as follows:**

A computer-readable medium carrying one or more sequences of one or more instructions for automatically routing an integrated circuit, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

receiving integrated circuit layout data that defines a set of two or more

integrated circuit devices to be included in the integrated circuit;

receiving integrated circuit connection data that specifies one or more electrical

connections to be made between the integrated circuit devices;

*F3*

determining, based upon the integrated circuit layout data and the integrated

circuit connection data, a set of one or more routing indicators that specify

a set of one or more preferable intermediate routing locations through

which a routing path is to be located to connect first and second integrated

circuit devices from the set of two or more integrated circuit devices;

determining, based upon the integrated circuit layout data, the integrated circuit

connection data and the set of one or more routing indicators, the routing

*81*

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path between the first and second integrated circuit devices, wherein the routing path satisfies specified design criteria and wherein determining the routing path between the first and second integrated circuit devices includes performing one or more design rule checks on one or more portions of the routing path as the routing path is being determined; updating the integrated circuit layout data to generate updated integrated circuit layout data that reflects the routing path between the first and second integrated circuit devices.

Rewrite claim 83 as follows:

E4

A system for automatically routing an integrated circuit, the system comprising:

- a data storage mechanism having stored therein
  - integrated circuit layout data that defines a set of two or more integrated circuit devices to be included in the integrated circuit, and
  - integrated circuit connection data that specifies one or more electrical connections to be made between the integrated circuit devices; and
- a routing mechanism communicatively coupled to the data storage mechanism, the routing mechanism being configured to determine, based upon the integrated circuit layout data and the integrated circuit connection data, a set of one or more routing indicators that specify a set of one or more preferable

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intermediate routing locations through which a routing path is to be located to connect first and second integrated circuit devices from the set of two or more integrated circuit devices,

determine, based upon the integrated circuit layout data, the

integrated circuit connection data and the set of one or more routing indicators, the routing path between the first and second integrated circuit devices, wherein the routing path satisfies specified design criteria, and wherein determining the routing path between the first and second integrated circuit devices includes performing one or more design rule checks on one or more portions of the routing path as the routing path is being determined; and

update the integrated circuit layout data to generate updated

integrated circuit layout data that reflects the routing path between the first and second integrated circuit devices.

*E4 could*  
**Rewrite claim 65 as follows:**

A system for automatically routing an integrated circuit, the system comprising:

a data storage mechanism having stored therein

integrated circuit layout data that defines a set of two or more

integrated circuit devices to be included in the integrated circuit, and

*83*

*EE*

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integrated circuit connection data that specifies one or more  
electrical connections to be made between the integrated  
circuit devices; and

a routing mechanism communicatively coupled to the data storage

mechanism, the routing mechanism being configured to

determine, based upon the integrated circuit layout data and the

integrated circuit connection data, a set of one or more  
routing indicators that specify a set of one or more preferable  
intermediate routing locations through which a routing path is  
to be located to connect first and second integrated circuit  
devices from the set of two or more integrated circuit  
devices,

determine, based upon the integrated circuit layout data, the

integrated circuit connection data and the set of one or more  
routing indicators, the routing path between the first and  
second integrated circuit devices, wherein the routing path  
satisfies specified design criteria, and wherein determining  
the routing path between the first and second integrated  
circuit devices includes

extending the routing path a specified amount to generate an

extended portion of the routing path, and

selectively performing a design rule check on only the

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could

extended portion of the routing path; and  
update the integrated circuit layout data to generate updated  
integrated circuit layout data that reflects the routing path  
between the first and second integrated circuit devices.

***Allowable Subject Matter***

8. Claims 16-18, 21, 23, 45, 46, 50, 52, and 63-65 are allowed.
9. The following is an Examiner's statement of reasons for allowance: The claims are allowed pursuant to the Decision on Appeal of the Board of Patent Appeals and Interferences.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

10. Any inquiry concerning this communication or earlier communications should be directed to Examiner A.M. Thompson whose telephone number is (571) 272-1909. The Examiner can usually be reached Monday thru Friday from 8:00 a.m. to 4:30 p.m..
11. Responses to this action should be mailed to the appropriate mail stop:

Mail Stop \_\_\_\_\_  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

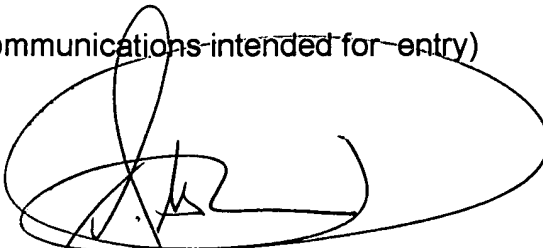
or faxed to:

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(703) 872-9306, (for all **OFFICIAL** communications intended for entry)



A. M. THOMPSON  
Primary Examiner  
Technology Center 2800

